

7.7 ²⁴ (Twice Amended) A fiber optic amplifier, comprising:

a fiber optic coupler including a pair of optical fibers juxtaposed to provide coupling of light at a first frequency between said fibers and to prohibit coupling of light at a second frequency between said fibers;

C2 a source of pumping illumination coupled to a first end of one of said pair of fibers, said pumping illumination comprising light having said first frequency;

a source of a signal to be amplified, coupled to a first end of the other of said pair of fibers, said signal to be amplified comprising light having said second frequency; and

a [waveguide] laser fiber formed of material which will possess a laser transition at said second frequency of said signal to be amplified if said material is pumped with said pumping illumination, said [waveguide] laser fiber coupled at one end to a second end of said other of said pair of fibers.

12.2 ²⁸ (Twice Amended) A method for amplifying a light signal carried by an optical fiber, comprising the steps of:

combining said light signal and pumping illumination on a single optical [waveguide] fiber; and

C3 coupling said combined light signal and pumping illumination from said single optical [waveguide] fiber to one end of a [waveguide] fiber comprised of a material which will emit stimulated radiation at a wavelength of said light signal if pumped with said pumping illumination.

13.2 ²⁹ (Twice Amended) A method of amplifying a light signal as defined in Claim ¹⁰ 28, wherein said combining step comprises

C3
concl'd. multiplexing said wavelength of said light signal and a wavelength of said pumping illumination in an optical coupler which is optically connected to said single optical [waveguide] fiber and which has a coupling efficiency which is wavelength dependent.

1531 (Twice Amended) A method of amplifying a light signal as defined in Claim 28, wherein the step of coupling comprises coupling said combined light signal and pumping illumination to a laser fiber having a diameter which is less than the absorption length of said laser fiber at said wavelength of said pumping illumination.

1132 (Twice Amended) A fiber optic apparatus, comprising:
a source of pump light comprising light having a first wavelength;

C4 an optical [waveguide] fiber comprising a laser material, said optical [waveguide] fiber emitting light at a second wavelength in response to pumping at said first wavelength; and

an optical coupler having an input port and an output port, said input port coupled to said pump source to receive light from said pump source, said output port coupled to said optical [waveguide] fiber for pumping said laser material, said coupler being highly wavelength discriminating so as to selectively couple one of said first and second wavelengths without substantial coupling of the other of said first and second wavelengths.
